Toxicology and Applied Pharmacology

Official Journal of the Society of Toxicology

Founding Editors
Frederick Coulston
Harry W. Hays
Arnold J. Lehman

Editorial Board
Yves Alarie
Marion W. Anders
Arthur L. Aronson
Anne P. Autor
Bernard A. Becker
Herbert Blumenthal
Joseph F. Borzelleca
William W. Carlton
Felix A. de la Iglesia
Robert L. Dixon
John Doull
Robert T. Drew
Donald J. Ecobichon
George C. Fuller
Arthur Furst
James E. Gibson
Vera C. Glocklin
Robert E. Gosselin
Jack E. Gray
Harold C. Grice
Paul B. Hammond
A. Wallace Hayes
Wayland J. Hayes
Robert Hill
Bo Holmstedt
Jerry B. Hook
Sam Kacew
Renate D. Kimbrough
Robert R. Lauwreys
Basil K. J. Leong
Paul Mazel
John R. McCoy
Rob S. McCutcheon
Robert E. Menzer
Ian C. Munro
Robert A. Neal
Paul M. Newberne
Stata Norton
Anthony K. Palmer
Emmett C. Pierce
Emil Poulsen
Mary L. Quaife
Jack L. Radomski
Edward S. Reynolds
Bernard A. Schwetz
Edward A. Smuckler
Arthur A. Stein
George M. Szczech
John A. Thomas
Gary A. Van Gelder
Ethard W. Van Stee
Mary Vore
James L. Way
Dorothy E. Woolley

Editor:
GABRIEL L. PLAA

Associate Editors:
JOHN L. EMMERSON
SEYMOUR L. FRIESS
PERRY J. GEHRING
TOM S. MIYA
JANE F. ROBENS
HANSPETER WITSCHI

Volume 52, 1980

ACADEMIC PRESS
A Subsidiary of Harcourt Brace Jovanovich, Publishers
New York London Toronto Sydney San Francisco

Copyright © 1980 by Academic Press, Inc.

ALL RIGHTS RESERVED

No part of this publication may be reproduced or transmitted in any form, or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc., (Operations Staff, P.O. Box 765, Schenectady, New York 12301), for copying beyond that permitted by Sections 107 and 108 of the U.S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1980 articles are the same as those shown for current articles.

MADE IN THE UNITED STATES OF AMERICA

CONTENTS OF VOLUME 52

NUMBER 1, JANUARY 1980

PING KWONG CHAN, CHADA S. REDDY, AND A. WALLACE HAYES. Acute Toxicity of Penicillic Acid and Its Interaction with Pentobarbital and Other Compounds 1

G. D. DIVINCENZO AND D. A. ZIEGLER. Metabolic Fate of 1,4-Cyclo[^{14}C]hexanedimethanol in Rats 10

F. IVERSON, K. S. KHERA, AND S. L. HIERLIHY. *In Vivo* and *in Vitro* Metabolism of Ethylenethiourea in the Rat and the Cat 16

BRYAN D. HARDIN AND JEANNE M. MANSON. Absence of Dichloromethane Teratogenicity with Inhalation Exposure in Rats 22

ROBERT L. BORNSCHEIN, LLOYD HASTINGS, AND JEANNE M. MANSON. Behavioral Toxicity in the Offspring of Rats Following Maternal Exposure to Dichloromethane 29

ROBERT B. DROTMAN. The Absorption, Distribution, and Excretion of Alkylpolyethoxylates by Rats and Humans 38

JOHN G. DENT, ELIZABETH GRAICHEN, STEPHANIE SCHNELL, AND JEROME LASKER. Constitutive and Induced Hepatic Microsomal Cytochrome *P*-450 Monooxygenase Activities in Male Fischer-344 and CD Rats. A Comparative Study 45

TARA MEHTA, ALAN J. PARKER, PATRICK K. CUSICK, NABI S. ZARGHAMI, AND BETTY E. HASKELL. The *Lathyrus sativus* Neurotoxin: Evidence of Selective Retention in Monkey Tissue 54

FRANCES CASHNER, MARK SCHUYLER, ROBERT FLETCHER, HARRY RITZ, AND JOHN SALVAGGIO. Immunologic Responses of Cynomolgus Monkeys after Repeated Inhalation Exposures to Enzyme and Enzyme–Detergent Mixtures 62

MICHAEL J. MURPHY, LAWRENCE J. PIPER, DONALD N. MCMARTIN, AND LAURENCE S. KAMINSKY. The Role of Cytochrome *P*-450-Inducing Agents in Potentiating the Toxicity of Fluroxene (2,2,2-Trifluoroethyl Vinyl Ether) 69

ADRIANA MARZI, EDITH G. D. DE TORANZO, AND JOSÉ A. CASTRO. Mechanism of Chlorpromazine Prevention of Carbon Tetrachloride-Induced Liver Necrosis 82

R. M. MCCLAIN, L. LANGHOFF, AND R. M. HOAR. Reproduction Studies with 1α,25-Dihydroxyvitamin D_3 (Calcitriol) in Rats and Rabbits 89

D. M. KOCHHAR, JOHN D. PENNER, AND THOMAS B. KNUDSEN. Embryotoxic, Teratogenic, and Metabolic Effects of Ribavirin in Mice 99

D. L. ARNOLD, C. A. MOODIE, H. C. GRICE, S. M. CHARBONNEAU, B. STAVRIC, B. T. COLLINS, P. F. MCGUIRE, Z. Z. ZAWIDZKA, AND I. C. MUNRO. Long-Term Toxicity of *ortho*-Toluenesulfonamide and Sodium Saccharin in the Rat 113

GARY V. KATZ, JOHN L. O'DONOGHUE, GEORGE D. DIVINCENZO, AND C. J. TERHAAR. Comparative Neurotoxicity and Metabolism of Ethyl *n*-Butyl Ketone and Methyl *n*-Butyl Ketone in Rats 153

J. W. OLDHAM, L. E. ALLRED, G. E. MILO, O. KINDIG, AND C. C. CAPEN. The Toxicological Evaluation of the Mycotoxins T-2 and T-2 Tetraol Using Normal Human Fibroblasts *in Vitro* 159

N. A. HACKETT, R. F. HENDERSON, AND A. H. REBAR. Kinetics of Lung Cell Labeling after Lung Lavage Assay 169

SHORT COMMUNICATIONS

IKUDO UENO, LEONARD FRIEDMAN, AND CHARLES L. STONE. Species Difference in the Binding of Aflatoxin B_1 to Hepatic Macromolecules 177

I. P. Lee, K. Suzuki, S. D. Lee, and R. L. Dixon. Aryl Hydrocarbon Hydroxylase Induction in Rat Lung, Liver, and Male Reproductive Organs Following Inhalation Exposure to Diesel Emission 181

Announcement 185

NUMBER 2, FEBRUARY 1980

Peter W. Benoit, John A. Yagiela, and N. Ferrell Fort. Pharmacologic Correlation between Local Anesthetic-Induced Myotoxicity and Disturbances of Intracellular Calcium Distribution 187

Darol E. Dodd, James S. Bus, and Craig S. Barrow. Lung Sulfhydryl Changes in Rats following Chlorine Inhalation 199

Thaweesak Trirawatanapong, Punya Temcharoen, Byaporn Na Nagara, and Tongtavuch Anukarahanonta. Alteration of Vascular Permeability Due to Cytochalasin E 209

Carrol S. Weil and Shayne C. Gad. Applications of Methods of Statistical Analysis to Efficient Repeated-Dose Toxicologic Tests. 2. Methods for Analysis of Body, Liver, and Kidney Weight Data 214

S. K. Tandon, L. Magos, and J. R. P. Cabral. Protection against Mercuric Chloride by Nephrotoxic Agents Which Do Not Induce Thionein 227

A. W. Andrews, J. A. Fornwald, and W. Lijinsky. Nitrosation and Mutagenicity of Some Amine Drugs 237

B. R. Blakley, C. S. Sisodia, and T. K. Mukkur. The Effect of Methylmercury, Tetraethyl Lead, and Sodium Arsenite on the Humoral Immune Response in Mice 245

L. E. Gongwer, K. Hubben, R. S. Lenkiewicz, E. R. Hart, and B. Y. Cockrell. The Effects of Daily Bathing of Neonatal Rhesus Monkeys with an Antimicrobial Skin Cleanser Containing Chlorhexidine Gluconate 255

G. Mitra, M. K. Poddar, and J. J. Ghosh. Effect of Tobacco-Leaf Extract Administration on Liver, Lung, Intestine, and Serum Enzymes 262

Richard C. Jee, I. Glenn Sipes, A. Jay Gandolfi, and Burnell R. Brown, Jr. Factors Influencing Halothane Hepatotoxicity in the Rat Hypoxic Model 267

Ikuko Ueno, Tomiko Horiuchi, and Makoto Enomoto. Effects of Chemical Agents on the Hepatotoxicity and Hepatic Accumulation of Luteoskyrin 278

Charles A. Keller and Richard A. Doherty. Effect of Dose on Lead Retention and Distribution in Suckling and Adult Female Mice 285

Mark Yuan and Peter C. Jurs. Computer-Assisted Structure–Activity Studies of Chemical Carcinogens: A Polycyclic Aromatic Hydrocarbon Data Set 294

J. McC. Baggett, Å. Thureson-Klein, and R. L. Klein. Effects of Chlordecone on the Adrenal Medulla of the Rat 313

James A. Bond, Hsueh-Ying L. Yang, Mark W. Majesky, Earl P. Benditt, and Mont R. Juchau. Metabolism of Benzo[*a*]pyrene and 7,12-Dimethylbenz[*a*]anthracene in Chicken Aortas: Monooxygenation, Bioactivation to Mutagens, and Covalent Binding to DNA *in Vitro* 323

L. S. Angevine and H. M. Mehendale. Chlorphentermine Uptake by Isolated Perfused Rabbit Lung 336

Short Communications

Keith F. Pfeifer and L. J. Weber. The Effect of Carbon Tetrachloride Treatment on Urine Flow Rate of the Rainbow Trout, *Salmo gairdneri* 347

I. Chu, V. Secours, I. Marino, and D. C. Villeneuve. The Acute Toxicity of Four Trihalomethanes in Male and Female Rats 351

Erratum 354

NUMBER 3, MARCH 15, 1980

R. H. Reitz, P. G. Watanabe, M. J. McKenna, J. F. Quast, and P. J. Gehring. Effects of Vinylidene Chloride on DNA Synthesis and DNA Repair in the Rat and Mouse: A Comparative Study with Dimethylnitrosamine 357

Brian G. Lake, Ronald C. Longland, Rosalyn A. Harris, Michael A. Collins, Irene A. Herod, and Sharat D. Gangolli. The Effect of Treatment with Some Phase II Substrates on Hepatic Xenobiotic Metabolism and the Urinary Excretion of Metabolites of the D-Glucuronic Acid Pathway in the Rat 371

Keith H. Byington, Dennis A. Yates, and William A. Mullins. Binding of Triethyllead Chloride by Hemoglobin 379

Yasunobu Suketa and Miyuki Sato. Changes in Glucose-6-Phosphatase Activity in Liver and Kidney of Rats Treated with a Single Large Dose of Fluoride 386

Åke Larsson and Madeleine Rohlin. *In Vivo* Distribution of ^{14}C-Labeled Ethylene-1-hydroxy-1,1-diphosphonate in Normal and Treated Young Rats. An Autoradiographic and Ultrastructural Study 391

B. J. Kelman and B. K. Walter. Fetal to Maternal Cadmium Movements across the Perfused Hemochorial Placenta of the Guinea Pig 400

Hiroshi Yasuda, Noriyoshi Izumi, Osafumi Shimada, Toshihiro Kobayakawa, and Michio Nakanishi. The Protective Effect of Tinoridine against Carbon Tetrachloride Hepatotoxicity 407

H. M. Mykkänen, J. W. T. Dickerson, and M. Lancaster. Strain Differences in Lead Intoxication in Rats 414

Melvin E. Andersen, Odis E. Thomas, Michael L. Gargas, Robert A. Jones, and Lawrence J. Jenkins, Jr. The Significance of Multiple Detoxification Pathways for Reactive Metabolites in the Toxicity of 1,1-Dichloroethylene 422

Walter J. Krasavage, John L. O'Donoghue, George D. DiVincenzo, and Clarence J. Terhaar. The Relative Neurotoxicity of Methyl-*n*-Butyl Ketone, *n*-Hexane and Their Metabolites 433

R. D. Kimbrough, M. P. Korver, V. W. Burse, and D. F. Groce. The Effect of Different Diets or Mineral Oil on Liver Pathology and Polybrominated Biphenyl Concentration in Tissues 442

William Diamantis, John Melton, R. Duane Sofia, and Vincent B. Ciofalo. Comparative Gastric Ulcerogenic Effects of Meseclazone, 5-Chlorosalicylic Acid and Other Nonsteroidal Anti-inflammatory Drugs following Acute and Repeated Oral Administration to Rats 454

Deborah A. Cory-Slechta, Robert H. Garman, and David Seidman. Lead-Induced Crop Dysfunction in the Pigeon 462

E. E. McConnell, J. A. Moore, B. N. Gupta, A. H. Rakes, M. I. Luster, J. A. Goldstein, J. K. Haseman, and C. E. Parker. The Chronic Toxicity of Technical and Analytical Pentachlorophenol in Cattle. I. Clinicopathology 468

C. S. Kim, L. A. O'Tuama, S. L. Cookson, and J. D. Mann. The Effects of Lead Poisoning on Calcium Transport by Brain in 30-Day-Old Albino Rabbits 491

Mark J. Reasor, Roberta A. Koshut, Michael J. McNulty, and Michael A. Trush. Chemiluminescence from Rat Alveolar Macrophages following Induction of Phospholipidosis with Chlorphentermine 497

Gary P. Carlson and Gerald P. Schoenig. Induction of Liver Microsomal NADPH Cytochrome *c* Reductase and Cytochrome *P*-450 by Some New Synthetic Pyrethroids . 507

William M. Mitchell, Norman L. Holy, Mark M. Jones, Mark A. Basinger, and William S. Vaughn. Effect of a Water-Soluble Phosphine on Acute Mercury Poisoning in Mice 513

Announcement 518

Author Index for Volume 52 519

Subject Index for Volume 52 521

Chemical Index for Volume 52 526